



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
OSB2000-0240

September 26, 2000

Mr. Lawrence C. Evans
U.S. Army Corps of Engineers
Portland District, CENWP-CO-GP
P.O. Box 2946
Portland, Oregon 97208-2946

Re: City of Seaside Revetment Construction on the Necanicum River, Clatsop County, Oregon
(Corps No. 2000-00721)

Dear Mr. Evans:

Enclosed is a biological opinion (Opinion) prepared by the National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act (ESA) on the City of Seaside Revetment Construction Project near Seaside, Oregon. The NMFS concludes in this Opinion that the proposed action is not likely to jeopardize Oregon Coast coho salmon or destroy or adversely modify critical habitat. Pursuant to section 7 of the ESA, NMFS has included reasonable and prudent measures with non-discretionary terms and conditions that NMFS believes are necessary and appropriate to minimize the potential for incidental take associated with this project.

Questions regarding this letter should be directed to Rob Markle of my staff in the Oregon State Branch Office at (503) 230-5419.

Sincerely,

Michael R. Crouse
f.c.

Donna Darm
Acting Regional Administrator



Endangered Species Act
Section 7 Consultation

Biological Opinion

City of Seaside Revetment Construction on the Necanicum River, Corps No. 2000-00721,
Clatsop County, Oregon

Agency: U.S. Army Corps of Engineers, Portland District

Consultation Conducted By: National Marine Fisheries Service,
Northwest Region

Date Issued: September 26, 2000

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I. BACKGROUND

The U.S. Army Corps of Engineers (Corps) requested formal consultation on a proposed revetment construction action on the Necanicum River in a letter dated August 14, 2000. NMFS received the request for consultation and supporting information describing the proposed action on August 24, 2000. The City of Seaside (City) is the applicant for the subject permit.

The proposed project is located South of the City of Seaside, Oregon along the Necanicum River (river-mile 6). This site is known as Peterson Point and is the location of a water intake pump station that fills the Peterson Point Reservoir. The intake is screened to prevent fish entrainment. The stream bank just downstream from the water intake structure had been protected by riprap that was installed in 1995. High-water events during November 1999 and June 2000 have resulted in erosion of the bankline upstream of the intake. This erosion has created a situation where additional high-water events will threaten the intake, and undermine the City water supply pipeline and the road leading to the Peterson Point reservoir. This road also serves as an alternative evacuation route for the Forest Lake Recreational Vehicle (RV) & Mobile Home Park. If the road and pipeline fail, the City would lose water to supply the residents and capabilities to fight fires due to the loss of pressure to the hydrant system. The eroded slope is nearly vertical with exposed soils. The Highway 101 bridge is located approximately 500 feet downstream of the proposed action site.

This biological opinion (Opinion) considers the potential effects of the proposed action on Oregon Coast (OC) coho salmon (*Oncorhynchus kisutch*), which occur in the proposed project area. OC coho salmon were listed as threatened under the Endangered Species Act (ESA) on August 10, 1998 (63 FR 42587), and critical habitat was designated on February 16, 2000 (65 FR 7764). NMFS concludes that the proposed action is not likely to jeopardize the subject species, or destroy or adversely modify designated critical habitat. Included in this Opinion is an incidental take statement with terms and conditions to minimize the take of the subject species. This consultation is conducted pursuant to section 7(a)(2) of the ESA and its implementing regulations, 50 CFR 402.

II. PROPOSED ACTION

The City proposes to harden a 110-foot length of bank at river-mile 6. Due to the steepness of the slope and the significance of the protected structures, the City proposes to harden the slope to the 100-year flood elevation (approximately 38 feet NGVD). The toe of slope is located at approximately 15 feet NGVD. The area impacted is estimated to be 0.08 acres. One-thousand cubic yards (cy) of fill will be used, of which 500 cy will be placed below the ordinary high water mark. A rock toe consisting of 5-foot diameter rock will be keyed into the substrate. Keying will require excavation of a 5-foot wide and 5-foot deep toe trench. Toe trench excavation will occur in the wetted channel and remove approximately 100 cy of material. Approximately five alder trees that have tumbled down the failed slope will also be removed. An estimated additional 100 cy of material will be excavated from the failed slope. Excavated material not used to regrade the bank will be disposed of in a spoils area already in existence near the City's water treatment plant. The riprap slope will be constructed at a 1.5:1 ratio and consist of 3-foot diameter rock. Rock will be placed to a vertical height of 23 feet. The bank above this point will be sloped to a 1:1 ratio, hydro-seeded, and covered with a biodegradable

mat (straw/coconut fiber). Some wood will be incorporated into the riprapped slope to provide beneficial function to fish during high water events.

The project is anticipated to require 10 to 12 days to complete, though work below the ordinary high water mark should be complete within five days (Telephone conversation with Neal Wallace, City of Seaside, 7 September 2000). Equipment will work from the near bank, but access will require the removal of two hemlock trees (4" to 5" dbh, 20' ht)(Telephone conversation with Neal Wallace, City of Seaside, 7 September 2000). The alternative was to have equipment work access from the far bank and work in the wetted channel. This alternative would have likely required substantially more vegetation removal.

Offsite mitigation planting of willows will be conducted on property owned by Russ Earl. The site is located approximately 0.1 to 0.8 miles downstream of the proposed action site (RM 5.1 to RM 5.9). The existing streambank consists of bare soil, eroding banks, and limited vegetation. Plantings will be conducted as part of a larger restoration project that will be submitted to the Oregon Watershed Enhancement Board (OWEB) for funding. The Necanicum Watershed Council and the Clatsop Soil and Water Conservation District are the submitting agencies. The City has arranged to contribute funds to plant approximately 10,000 square feet of riverbank with willows. The proposed action will directly impact approximately 3,500 square feet. Therefore mitigation planting will occur at an approximate 3:1 ratio based on area.

The proposed project includes the following set of best management practices (BMPs) designed to reduce adverse environmental impacts. These BMPs will be followed on all activities associated with the permitted action and will be provided to the project contractor. The NMFS regard these BMPs as integral components of the culvert replacement and consider them to be part of the proposed action.

1. Work is proposed to occur during the ODFW recommended in-water work window of July 1-September 15, which will minimize the presence of migrating and spawning OC coho salmon at the project site and allow work to occur during the dry season.
2. The City will use a floating silt barrier installed in a semi-circular manner around the slide area to prevent sediment from traveling downstream.
3. The City will also use an absorbent barrier inside of the silt barrier to trap any oily residue from going downstream.
4. Toe rock will be placed in an irregular manner to provide roughness.
5. Along the toe of slope, willows will be placed perpendicular to the river channel and the rock placed on top.

III. BIOLOGICAL INFORMATION AND CRITICAL HABITAT

Although there are currently limited data to assess population numbers or trends, NMFS believes that all coho salmon stocks comprising the OC coho salmon ESU are depressed relative to past abundance. The status and relevant biological information concerning OC coho salmon are well described in the

proposed and final rules from the Federal Register (60 FR 38011, July 25, 1995; and 63 FR 42587, August 10, 1998, respectively), and Weitkamp *et al.* (1995).

Abundance of wild coho salmon spawners in Oregon coastal streams declined during the period from about 1965 to roughly 1975 and has fluctuated at a low level since that time (Nickelson *et al.* 1992). Spawning escapements for this ESU may be at less than 5 percent of abundance from that in the early 1900s. Contemporary production of coho salmon may be less than 10 percent of the historic production (Nickelson *et al.* 1992). Average spawner abundance has been relatively constant since the late 1970s, but preharvest abundance has declined. Average recruits-per-spawner may also be declining. The OC coho salmon ESU, although not at immediate danger of extinction, may become endangered in the future if present trends continue (Weitkamp *et al.* 1995).

Timing of adult coho salmon river entry is largely influenced by river flow. Coho salmon normally wait for fall freshets before entering rivers. In the Necanicum River watershed, adults return between mid-October and mid-January. OC coho salmon spawn in the Necanicum River basin between mid-November and late-January with peak spawning occurring in late-November (Weitkamp *et al.* 1995). Juvenile coho salmon rear for one year in freshwater before migrating to the ocean. Coho salmon prefer cool water temperatures of 53⁰ to 58⁰ F, with 68⁰ F as maximum for rearing (Reeves *et al.* 1989). Spawning and juvenile rearing generally take place in small low gradient (generally less than 3 percent) tributary streams (Floyd 2000). Juvenile OC coho salmon migrate out of the Necanicum River basin as smolts between March and early-June.

Critical habitat for OC coho salmon includes Oregon coastal river basins (freshwater and estuarine areas) between Cape Blanco and the Columbia River. Freshwater critical habitat includes all waterways, substrates, and adjacent riparian areas below longstanding, natural impassable barriers (i.e., natural waterfalls in existence for at least several hundred years) and several dams that block access to former coho salmon habitat. Riparian areas include areas adjacent to a stream that provide the following functions: shade, sediment, nutrient or chemical regulation, streambank stability, and input of large woody material (LWM) or organic matter. The proposed action would occur in designated critical habitat for OC coho salmon.

IV. EVALUATING PROPOSED ACTIONS

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations). In conducting analyses of habitat-altering actions under section 7 of the ESA, the NMFS uses the following steps: 1) Consider the status and biological requirements of the species; 2) evaluate the relevance of the environmental baseline in the action area to the species' current status; 3) determine the effects of the proposed or continuing action on the species; 4) consider cumulative effects; and 5) determine whether the proposed action, in light of the above factors, is likely to appreciably reduce the likelihood of species survival in the wild or adversely modify its critical habitat. In completing this step of the analysis, NMFS determines whether the action under consultation, together with all cumulative effects when added to the environmental baseline, is likely to jeopardize the continued existence of the listed species or result in destruction, adversely modify their critical habitat, or both. If NMFS finds that the action is likely to jeopardize the listed species, NMFS must identify reasonable and prudent alternatives for the action.

A. Biological Requirements

The first step in the methods NMFS uses for applying the ESA section 7(a)(2) to listed salmon is to define the biological requirements of the species most relevant to each consultation. NMFS also considers the current status of the listed species taking into account population size, trends, distribution and genetic diversity. To assess the current status of the listed species, NMFS starts with the determinations made in its decision to list OC coho salmon under the ESA and also considers new data available that are relevant to the determination (Weitkamp *et al.* 1995).

The relevant biological requirements are those necessary for OC coho salmon to survive and recover to naturally reproducing population levels at which protection under the ESA will become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment.

For this consultation, the biological requirements are habitat characteristics that function to support successful spawning, rearing, and migration. The current status of the OC coho salmon, based upon their risk of extinction, has not significantly improved since the species was listed and, in some cases, their status may have worsened.

B. Environmental Baseline

The environmental baseline is an analysis of the effects of past and ongoing human and natural factors leading to the current status of the species or its habitat and ecosystem within the action area. The action area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR 402.02). Direct effects occur at the project site and may extend upstream or downstream based on the potential for impairing fish passage, hydraulics, sediment and pollutant discharge, and the extent of riparian habitat modifications. Indirect affects may occur throughout the watershed where actions described in this Opinion lead to additional activities or affect ecological functions contributing to stream degradation. For this consultation, the action area includes the affected streambed, bankline, adjacent riparian zone, and aquatic areas that may be affected by increased turbidity during construction in the Necanicum River.

The bulk of production for the OC coho salmon ESU is skewed to its southern portion where the coastal lake systems (e.g. Tenmile, Tahkenitch, and Siltcoos Basins) and the Coos and Coquille Rivers are more productive. The proposed action area is located in the northern half of the ESU where production is more depressed and habitat in the action area is underseeded. OC coho salmon are known to spawn in the Necanicum River, and use the waterways for rearing.

The Necanicum River is a small coastal stream with a mainstem starting at the base of Humbug Mountain and traveling 21 miles to Seaside where it empties into the Pacific Ocean. Streamflow during the month of September is estimated to be 28 cfs. Due to the geology of the basin and the shallow aquifer, the Necanicum River rises very quickly during storm events causing high velocity scouring. Stream banks in the affected reach are steep sloped with medium sized alders, hemlock, willow, and blackberry plants.

Land use immediately upstream from the proposed action site includes a RV and Mobile Home park and a rock quarry. Land use down stream includes rural residential, agricultural pasture and RV camping. Lower reaches of the Necanicum River are heavily urbanized. The upper watershed has been logged and some large slides have occurred in the main basin.

The Necanicum River is on the Oregon Department of Environmental Quality 303(d) list for water quality not meeting the bacteria criterion (ODEQ 2000).

V. ANALYSIS OF EFFECTS

A. Effects of Proposed Actions

Rivers are dynamic systems that perpetually alter their courses in response to multiple physical criteria. Residences and other structures constructed along waterways are subject to flooding and undercutting as a result of these natural changes in stream course. Structural embankment hardening has been a typical means of protection for structures located along waterways. Impacts to waterways from revetment installation are simplification of stream channels, alteration of hydraulic processes, and prevention of natural channel adjustments (Spence *et al.* 1996). Moreover, embankment hardening may shift the erosion point either upstream or downstream of the subject site and contribute to stream velocity acceleration. As erosive forces impact different locations and bank hardening occurs in response, the river eventually attains a continuous fixed alignment lacking habitat complexity (COE 1977).

Fish habitat is enhanced by the diversity of habitat at the land-water interface and adjacent bank (COE 1977). Streamside vegetation provides shade which reduces water temperature. Overhanging branches provide cover from predators. Organisms that fall from overhanging branches may be preyed upon by fish, or provide food sources for other prey organisms. Immersed vegetation, logs, and root wads provide points of attachment for aquatic prey organisms, shelter from swift currents during high flow events, retain bed load materials, and reduce flow velocity.

The most desirable method of bank protection is revegetation. However, revegetation alone can seldom stabilize banks steeper than 3:1 or areas of high velocity (COE 1977). Biologically less desirable, fixed structures provide the most reliable means of bank stability. The use of structural measures should be a last resort. Combining structural measures (i.e. sloped riprap or mechanically stabilized earth walls) and vegetation (and/or large woody material [LWM]) is preferable to an unvegetated structural solution (COE 1977).

The parameters that can potentially be affected by the proposed construction include water quality (temperature, sediment, and chemical contamination), gravel recruitment, LWM recruitment, and stream hydraulics. Direct impacts related to project activities may occur on juvenile OC coho salmon rearing in the affected Necanicum River reach.

Water Quality

a. Temperature

Water temperatures may be degraded as a result of construction activities. The replacement of soil and any existing remnant vegetation with rock has the potential to elevate stream temperatures.

Rock riprap may function as a conductive heat source. Spence *et al.* (1996) states that the nature of the substrate may affect the amount of heat transfer, and bedrock more efficiently transfers heat than gravels. Therefore, it can be deduced that the greater the mass available to receive solar radiation the greater the heating potential. Heat collected by the rock during the day elevates night time temperatures thereby dampening diel temperature fluctuations.

Riparian vegetation is also a major factor in stream temperature regulation. Vegetation removal associated with the proposed action is minimal and provides limited direct shading, if any.

NMFS does not expect the proposed action in and of itself will result in a measurable increase in stream temperature, but will contribute to any cumulative effect of streambank hardening and riparian vegetation removal within the watershed. Willow plantings proposed to occur downstream as part of a larger enhancement project will not produce significant direct shading of the waterway.

b. Sediment

Excavation of a toe trench in the wetted channel will result in short-term releases of sediment. An increase in turbidity can impact fish and filter-feeding macro-invertebrates downstream of the work site. Fine sediment introduced into a water body can cause turbidity. Moreover, excavation may cause sediment already within the channel or bed of a water body to move into the water column and increase turbidity. At moderate levels, turbidity has the potential to adversely affect primary and secondary productivity; at higher levels, turbidity may interfere with feeding and may injure and even kill both juvenile and adult fish (Spence *et al.* 1996).

Transportation of sediments to the river is also possible. Ground disturbance activities will expose and dislodge soils. Any precipitation during select periods of vulnerability may result in erosion of soils and increases in stream turbidity.

To minimize the potential for stream turbidity and direct impacts to fish, work will occur during the ODFW recommended in-water work window (July 1 to September 15). During this window, river flows are typically low, fish presence is reduced, and rainfall is minimal. Low flows will allow a majority of the work to occur in the dry, thereby reducing indirect (turbidity) and direct impacts to fish. The deployment of a silt barrier to contain suspended sediments to the work site will reduce downstream effects. Fish presence is minimal with rearing juveniles potentially present, but no adult spawning or egg incubation occurring. The low probability of rainfall reduces the likelihood that sediment will be transported into the river. Based on data provided by the Western Regional Climate Center (2000) for Seaside, average rainfall during the anticipated work period (September) represents 3.7 percent of the annual with less than a 11 percent probability of receiving 0.5 inches of rainfall on any given day. The precipitation probability increases greatly after September 30, as does the potential presence of returning adult coho salmon.

NMFS recognizes sediment release will occur as part of the proposed action, but that offsite transport will be minimal in volume and duration. Long-term impacts will result in a reduction in sediment

contribution from this site. Willow plantings proposed to occur downstream will function to assist in stabilizing streambanks and potentially reduce bank erosion.

c. Chemical Contamination

As with all construction activities, accidental release of fuel, oil, and other contaminants may occur. Operation of the back-hoes, excavators, and other equipment requires the use of fuel, lubricants, etc., which, if spilled into the channel of a water body or into the adjacent riparian zone, can injure or kill aquatic organisms. Herbicides used to clear vegetation may be used in riparian areas, where they may enter water bodies. Petroleum-based contaminants (such as fuel, oil, and some hydraulic fluids) contain poly cyclic aromatic hydrocarbons (PAHs) which can cause acute toxicity to salmonids at high levels of exposure and can also cause chronic lethal as well as acute and chronic sublethal effects to aquatic organisms (Neff 1985). Similarly, exposure to herbicides can have lethal and sublethal effects on salmonids, aquatic invertebrates, aquatic vegetation, as well as target and non-target riparian vegetation (Spence *et al.* 1996).

d. Gravel Recruitment

Armoring streambanks removes a potential gravel source from the stream system, and typically results in gravel recruitment occurring at another site. The cumulative effect of bank hardening may lead to loss of enough sources that the waterway becomes gravel limited. Streams continuously transport eroded material downstream from areas of erosion to areas of deposition. Transport is a function of discharge and is therefore episodic (Kondolf 1994). A net loss of gravel recruitment to the system may ultimately result in the loss of sufficient gravels to support successful salmon spawning.

NMFS does not expect that the proposed action in and of itself will result in a measurable loss in gravel production, but will contribute to any cumulative effect of bank hardening within the watershed.

e. Large Woody Material Recruitment

A loss of LWM recruitment potential will occur where vegetation will be removed. Two hemlock trees (4" to 5" dbh) are proposed for removal as part of this action. These would potentially contribute LWM to the river in 80 years or more. The City has agreed to incorporate some wood into the riprap slope to provide some LWM function. As indicated previously, limited replanting of willow and grasses is proposed onsite and downstream. These species will not produce functional LWM for the waterway.

f. River Hydraulics

The removal of woody debris and placement of riprap along a 110-foot length of streambank will alter river hydraulics. Simplification of the embankment may result in a reduction in current disruption characteristics and velocity acceleration, which subsequently may relocate erosion to another site. Coho salmon utilize micro-eddies to take refuge from high flow currents, to assist in upstream migration, and to feed on river transported prey items. The proposed design attempts to address these concerns by using an irregular contour at the rock toe and incorporating alder into the riprap slope. While NMFS believes these measures will not necessarily replicate natural roughness function on site or

contribute to addressing the structure deficiency of the reach, the proposed measures will provide an acceptable amount of velocity disruption and minimize project caused impacts with regard to this parameter.

B. Effects on Critical Habitat

The NMFS designates critical habitat based on physical and biological features that are essential to the listed species. Essential features of designated critical habitat include substrate, water quality, water quantity, water temperature, food, riparian vegetation, access, water velocity, space and safe passage. The proposed action area will occur within designated critical habitat for OC coho salmon.

The presence of the reservoir intake and other bank development in the area affects critical habitat in the long term by restricting natural channel forming processes, altering stream hydrology, reducing riparian vegetation, increasing stream temperature, and reducing allochthonous input. In addition, Peters *et al.* (1998) found that densities of juvenile coho salmon were generally reduced at riprapped sites when compared to areas containing large woody debris or undercut banks. Willows planted within and around the riprap may provide limited shade, cover, and allochthonous input in the long term. Offsite willow plantings are expected to provide similar limited function along an extended bankline and reduce erosion within the reach.

Short-term impacts resulting from the proposed action could occur from turbidity and debris contribution to the waterway during construction activities and storm events during construction. These effects would be largely ameliorated by project timing (i.e., dry season) as described above in *Effects of Proposed Action*.

While the proposed project represents a net detriment to the existing natural system, beneficial aspects include removal of a sediment source and reestablishment of some riparian vegetation. These aspects would serve to reduce stream turbidity and offer some restoration of riparian function to the embankment onsite and downstream on Mr. Earl's property.

VI. CONCLUSION

After reviewing the current status of OC coho salmon, the environmental baseline for the action area, the effects of the proposed culvert replacement and road widening action and the cumulative effects, NMFS has determined that the City of Seaside's Revetment Construction Project on the Necanicum River, as proposed, is not likely to jeopardize the continued existence of the OC coho salmon, and is not likely to destroy or adversely modify designated critical habitat. This finding is based, in part, on incorporation of BMPs into the proposed project design.

VII. CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered

species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. NMFS has no additional conservation recommendations regarding the action addressed in this Opinion.

VIII. REINITIATION OF CONSULTATION

This concludes formal consultation on these actions in accordance with 50 CFR 402.14(b)(1). Reinitiation of consultation is required: (1) If the action is modified in a way that causes an effect on the listed species that was not previously considered in the biological assessment and this Opinion; (2) new information or project monitoring reveals effects of the action that may affect the listed species in a way not previously considered; or (3) a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16).

IX. REFERENCES

Section 7(a)(2) of the ESA requires Opinions to be based on the best scientific and commercial data available. This section identifies the data used in developing this Opinion.

Floyd, R. 2000. *ODOT Culvert Retrofit Research: Program analysis of fish passage through retrofitted culverts, Biological Assessment*. Oregon Department of Transportation, Salem, OR. May 25, 2000.

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Nickelson, T.E., J.W. Nicholas, A.M. McGie, R.B. Lindsay, D.L. Bottom, R.J. Kaiser, and S.E. Jacobs. 1992. *Status of anadromous salmonids in Oregon coastal basins*. Oregon Department of Fish and Wildlife, Research Development Section and Ocean Salmon Management, 83 p. Oregon Department of Fish and Wildlife, P.O. Box 59, Portland.

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Peters, Roger J., Brian R. Missildine, and David L. Low. 1998. Seasonal fish densities near river banks stabilized with various stabilization methods. U.S. Fish and Wildlife Service, Lacey, Washington. 32p.

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- Western Regional Climate Center (WRCC). 2000. *Seaside, Oregon (357641): Period of Record Monthly Climate Summary*. URL <<http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?orseas>>. Accessed September 6, 2000.

X. INCIDENTAL TAKE STATEMENT

Section 9 of the ESA and Federal regulation pursuant to section 4(d) of the ESA prohibit the take of endangered species and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct. Harm is further defined by the NMFS to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, and sheltering. Harass is defined by the NMFS as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of Section 7(b)(4) and Section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered to be prohibited taking under the ESA provided that such taking is in compliance with the term and conditions of this Incidental Take Statement.

A. Amount or Extent of Take

The NMFS anticipates that certain site-specific actions associated with the construction of the revetment called for by the proposed action have more than a negligible likelihood of incidental take of OC coho salmon. Designated critical habitat for OC coho salmon may be adversely affected by project completion, but the negative effects are expected to be short term. The potential for take has been substantially reduced through the application of the BMPs. Therefore, even though the NMFS

expects some low level of incidental take to occur due to the action covered by this Opinion, the best scientific and commercial data available are not sufficient to enable NMFS to estimate a specific amount of incidental take to the species itself. In instances such as this, the NMFS designates the expected level of take as unquantifiable. Based on the information provided, NMFS anticipates that an unquantifiable but low level of incidental take can occur as a result of the action covered by this Opinion. In the accompanying Opinion, the NMFS determined that this level of anticipated take is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat.

B. Reasonable and Prudent Measures

The measures described below are non-discretionary, and must be undertaken by the Corps so that they become binding conditions of any grant or permit issued to the City of Seaside, as appropriate, for the exemption on section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps: 1) Fails to assume and implement the terms and conditions; or 2) fails to require the City of Seaside to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. Activities that are not carried out consistent with the BMPs listed in the Opinion (Section II - Proposed Action) or reasonable and prudent measures presented below will require further consultation. In order to monitor the impact of incidental take, the Corps shall report the progress of the action and its impact on the species to the NMFS as specified in the incidental take statement 50 CFR 402.14(i)(3).

The NMFS believes that the following reasonable and prudent measures are necessary and appropriate to minimize impacts of incidental take of OC coho salmon from completion of the City of Seaside Revetment Construction Project on the Necanicum River.

The Corps shall:

1. Minimize the likelihood of incidental take from construction activities in or near watercourses by implementing pollution and erosion control measures.
2. Minimize the likelihood of incidental take associated with impacts to riparian and in-stream habitats by avoiding or replacing lost riparian and in-stream functions.
3. Minimize the likelihood of incidental take associated with in-stream work by restricting work to recommended in-water work periods.
4. Monitor the effectiveness of the proposed conservation measures in minimizing incidental take and report annually to NMFS.

C. Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, the Corps must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1. To Implement Reasonable and Prudent Measure #1, above, the Corps shall ensure that:
 - a. Construction activities meet or exceed all requirements of the Oregon Department of Environmental Quality for the National Pollutant Discharge Elimination System (NPDES) 1200-CA permit.
 - b. A Pollution Control Plan (PCP) is developed to prevent point-source pollution related to construction operations that satisfies all pertinent requirements of Federal, State and Local laws and regulations, and the requirements of these conservation measures. The PCP will include the following:
 - i. A description of methods to be used to prevent erosion and sedimentation that covers sites, borrow pit operations, haul roads, equipment storage sites, fueling operations and staging areas;
 - ii. a description of the hazardous products or materials that will be used, including inventorying, storage, handling, and monitoring; and
 - iii. a spill containment and control plan with notification procedures; specific clean up and disposal instructions for different products; quick response containment and clean up measures which will be available on site; proposed methods for disposal of spilled materials; and employee training for spill containment.
 - c. The applicant adheres to BMPs designed by the Corps and the State of Oregon to prevent the release of sediments and/or hazardous materials.
 - d. All erosion control devices are inspected during construction to ensure that they are working adequately.
 - e. A supply of erosion control materials (e.g., straw bales and clean straw mulch) are kept onsite to respond to sediment emergencies.
 - f. Vehicles operated within 150 feet of the 2-year floodplain are free of fluid leaks. Daily examination of vehicles for fluid leaks is required.
 - g. Vehicle staging, maintenance, refueling, and fuel storage areas, will be at least 150 feet from the 2-year flood elevation.
 - h. At the end of each work shift, vehicles will be stored no less than 150 feet (horizontal distance) from the 2-year flood elevation.
 - i. No pollutants of any kind (i.e., petroleum products) will come in contact with the area below the ordinary high water mark (2-year flood elevation).
 - j. No surface application of fertilizer will occur within 50 feet of any stream channel as part of this permitted action.

- k. No herbicide or pesticide application will occur within 150 feet of any stream channel as part of this permitted action. Mechanical removal of undesired vegetation and root nodes is permitted.
 - l. Temporary erosion and sediment controls will be used on all exposed slopes during any hiatus in work exceeding 7 days.
 - m. Exposed soil surfaces will be permanently stabilized at finished grade with native grass seeding and mulch prior to October 15, 2000.
2. To implement Reasonable and Prudent Measure #2, above, the Corps shall ensure that:
- a. Material removed during excavation will only be placed in locations where it cannot enter sensitive aquatic resources. Whenever topsoil is removed, it will be stored and reused onsite to the greatest extent possible.
 - b. Rock shall be individually placed in such a manner as to produce an *irregularly* contoured face to provide velocity disruption. No end dumping shall be allowed.
 - c. Alteration or disturbance of the stream banks and existing riparian vegetation will be minimized to the greatest extent possible.
 - d. All existing trees within 150 feet of the edge of bank should be retained to the greatest extent possible.
 - e. Live local-stock willow cuttings, stakes or posts are used in areas to be planted with willows.
3. To implement Reasonable and Prudent Measure #3, above, the Corps shall ensure that:
- a. All work shall be completed within the ODFW recommended in-water work period of July 1 to September 15. No work shall take place outside this period without prior written authorization from the Corps (in consultation with ODFW and NMFS).
 - b. The applicant will arrange a pre-work meeting with ODFW (Joe Sheahan, 503-338-0106) and the contractor prior to commencement of project activities.
4. To Implement Reasonable and Prudent Measure #4, above, the Corps shall ensure that:
- a. Provide NMFS with a report describing the success of conservation measures and confirmation of as-built. This report will include an evaluation the success of turbidity control measures, and will submitted as outlined below.
 - b. *Construction.* The report on the conservation measures and as-built component of monitoring will be provided by December 31, 2000, and include a description of:

- i. Specific methods actually used to contain turbidity, including details of silt barrier deployment;
 - ii. Stream conditions prior to and following placement and removal of curtains;
 - iii. Any mortality of fish resulting from project activities; and
 - iv. Verify the finished grade and elevations were constructed as designed with irregular contours.
- c. *Offsite* plantings. Provide confirmation by October 1, 2002, that offsite mitigation plantings have occurred as described in this Opinion. Failure to complete offsite mitigation by this date will require reinitiation of consultation.

- d. Monitoring report will be submitted to:

Oregon Branch Chief
National Marine Fisheries Service
525 NE Oregon Street, #500
Portland, Oregon 97232-2737

Oregon Department of Fish & Wildlife
Attn: Joe Sheahan
Astoria Field Office Room 101
2021 Marine Drive
Astoria, Oregon 97103

- e. If a dead, sick or injured Oregon Coast coho salmon is located, immediate notification must be made to Rob Markle, NMFS, telephone: (503) 230-5419, or Joe Sheahan, ODFW, telephone: (503) 338-0106. Care will be taken in handling sick or injured specimens to ensure effective treatment and care or the handling of dead specimens to preserve biological material in the best possible state for later analysis of cause of death. In conjunction with the care of sick or injured species or preservation of biological material from a dead animal, the finder has the responsibility to carry out instruction provided by Law Enforcement to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed.